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in the warm sunshine, near abundance of *Carex canescens*, var. *alpicola*, which was growing in dense tufts. I was surprised to find *Muhlenbergia glomerata*, which is credited in the *Manual* to bogs, growing here among the dry rocks. Farther down in the woods we found *Viola pubescens*, with its variety *eriocarpa*, and *V. Canadensis*, in various stages of fruit and flower. After descending the mountain we walked back through the woods along the shore of the lake. *Fragaria vesca* and *F. Virginiana*, were both abundant along the roadside, and we had a good opportunity to observe the differences between the two species. The thin, light green leaves and small fruit with superficial achenia of *Fragaria vesca* make it easily distinguishable from the other species, with its much darker leaves and imbedded achenia. I had not realized that the fruit of the two species presented such a different appearance. The fruit of *Fragaria vesca* is very insipid to the taste, as compared with *F. Virginiana*.

A small muddy pond and a bog behind the hotel well repaid more than one visit. *Najas flexilis* and *Chara intermedia* cover the bottom of the pond, while its margin is lined with many interesting plants, among others, *Lobelia Kalmii*, *Habenaria obtusata* and *H. hyperborea*.

Our two weeks sped quickly by and we were obliged to leave this enchanting spot just as the asters, solidagos and other composites were coming into bloom. My object in this short sketch has been, not to enumerate all, or nearly all, of the interesting plants that we found in this locality, or to tell anything new, but to show what a rich botanical field lies within easy reach of all who have the leisure and the desire to visit Willoughby Lake.

BRIEFER ARTICLES.

Notes on *Eatonia*.—Having recently made some investigation into the genus *Eatonia*, I wish to call the attention of botanists to such forms of that genus as they may meet with. The indications are that there are several new species or very marked varieties, of which I think the two following may be well separated as species:

1. *EATONIA DUDLEYI*.—Culms 2 to 2½ feet high, very slender: cauline leaves only 1 or 2 inches long, abruptly acute, spreading; the radical ones 3 to 6 inches long: panicle slender, nearly linear, 3 to 6 inches long, the branches few and mostly appressed: upper empty glume obovate, obtuse, broadly scarious on the margins, smoothish; the lower glume broader than in *E. Pennsylvanica*, and nearly as long as the flower next above it; flowering glumes linear-oblong, obtuse or abruptly acute, the second one hispidulate. Grows in open

dry woods, from Michigan to Long Island, and Pennsylvania to North Carolina.

Easily distinguished from *E. Pennsylvanica* by the slender culms and panicles, the very short cauline leaves, the longer and wider lower glume, the more obtuse and shorter upper glume, and the shorter obtuser flowering glumes.

2. *EATONIA FILIFORMIS*.—*E. Pennsylvanica*, var. *filiformis* Chapman. Very well characterized by Dr. Chapman in the Flora of the Southern States. It is easily distinguished by the very long filiform leaves, slender culm and panicle, short obtuse flowers, and very obtuse smoothish upper glume. Florida to Texas.

There are several varieties of *E. Pennsylvanica* and of *E. obtusata*, and in Louisiana there is a peculiar form with often 3-flowered spikelets, the flowering glumes acuminate and sometimes mucronate.—GEO. VASEY.

On the characters of species in Cacti.—Just what are good characters or not for distinguishing species of Cactaceæ is worthy of study. As the species are so difficult to determine in herbaria, I try to get living specimens and watch their growth. Some two years ago I had sent to me by a stranger in Texas a plant which he called *Mammillaria applanata*, with a hint that if I sent money and trusted to him, he would send living plants of the cacti of that region to the value thereof. I sent five dollars, but have never had cactuses, or answers to letters since. Though my plant, therefore, cost me five dollars, it seemed to agree pretty well with Engelmann's description in *Pl. Lindheimeriana*, of *M. applanata*. Haage & Schmidt of Erfurt, in the midst of men who know cacti, sent me another as *M. applanata*. Dr. Engelmann, in *Botany of Mexican Boundary*, speaks of his *M. applanata* and *M. hemisphærica* as being after all but "different forms" of *M. Heyderi*, Muhlenpf. Now *M. applanata*, as described by Engelmann, is "depressed," with yellowish lobes to the stigma, and yellowish stamens. *M. hemisphærica* is "hemispherical," with yellowish-red stigma-lobes, and reddish stamens. Now this last suits my German specimen, and it should be that "form," but Engelmann says it has much fewer and shorter spines than the "form" *applanata*; but this has just as many and just as long, but they are so slender that they might be termed cilia, and they are slightly recurved. The other, which being depressed might be *applanata*, has stiff and rather lighter spines. The plant is about three inches high by four wide; the hemispherical one about four by six. The tubercles in the depressed one are so close together that we can note no fleecy wool in the axils, while in the other they are all distinct, and the little mass of wool is plainly seen. In the depressed form the flowers are so comparatively short that they can not expand fully, through the interference of the spines; in the other they are longer, so long that the petals spread over the bundles of spines, and when in full sunlight give the plant quite a gay appearance. So far as we usually judge of species among cacti, we have characters for two good species. Outside of this are characters not mentioned by Englemann. Supposing the depressed one to be *M. applanata*, the lobes of the stigma are green, not yellow, and about two lines long. The lobes of *M. hemisphærica* (?) are four lines long.

But there is a something almost indescribable by which the student of cacti can class the "forms," and as these are now blooming before me to-day in my